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Port cities

Port cities are the nodes of distribution networks and have developed in different ways. Three models predominate and, between them, emphasize inner-city quays, dock extensions, market systems, destination logistics and relations between port cities as part of a network. These Western-biased theories attempt to explain, but fall short of fully understanding, the evolution of port cities and their present and future role. Using Jakarta as a model provides a necessary complement.

Peter J.M. Nas

In the model he calls Anyport, Bird (1971) examines the port's layout. Hoyle's Interface model (1988) emphasizes the role of technological development in relations between port and city. Van Klink's Rotterdam model (1995) considers ports as belonging to a network and addresses functional and spatial transformations within this context.

These models cover technology, spatial arrangements and management but neglect the role of culture in structural changes to the port, whose value and meaning to society have changed over time. The most spectacular transformation occurred at the end of the nineteenth century, when city and port began to separate. Ports functioning as the heart of their cities became detached transit ports divorced from urban life and eventually turned into distant industrial sites ignored or left derelict by the city. Revitalization of waterfronts and dock areas enticed the city back to the port with the possibility of creating high-standard living space. Especially in the 1980s, dilapidated port areas were renovated, with cultural tastes overriding functional principles. The port has again assumed its role as a logistical centre, relaying goods from distant sources to remote destinations and everywhere in between, while the port city of the information age has evolved into the centre of an urban network extending far beyond any previously imaginable horizon. Accounting for culture, then, there are really four dimensions to port city development: technology, spatial arrangements, culture and management.

Take technology. As it develops, ports must adapt. For example, steam power freed shipping from its dependence on wind and tide and permitted scheduled services (Loyen 2000: 13); maritime industry enabled the transportation of energy and food products; industrialization's appetite for oil augured the pipeline; and the automation of shipping and port transfer and the introduction of the container have revolutionized ports, decreasing labour intensity and increasing competition.

Spatial arrangements, meanwhile, depend largely on technical conditions. For instance, changes in transportation have compelled authorities to consider expanding ports, though they are also bound by environmental rules, quality of life concerns and market forces. Culture must also be considered, but even though a heterogenous culture - based on a mixture of different activities, peoples and functions - characterizes most port cities, the literature patently under-represents it.

Van Klink (1995: 12) indicates that users, local government and port authorities play important roles in the management of changing port functions. Local governments often assign management to

a port authority whose responsibilities include basic infrastructure maintenance, monitoring (environmental and safety control) and stimulating new activities. Thus the port authority is the middle man between the government and port users; the behaviour of all three depends on external economic, technological and social forces, and helps determine functional and spatial port structure.

Jakarta

Jakarta embodies these four dimensions, supplementing current Western-biased models. Jakarta is a dual port city comprised of Sunda Kelapa, the ancient river port for the inter-island traditional wooden sailing fleet (*pinisi*), and Tanjung Priok, a set of nineteenth-century sea docks for steel vessels modernized for container transport. History and environment contributed to this dual nature.

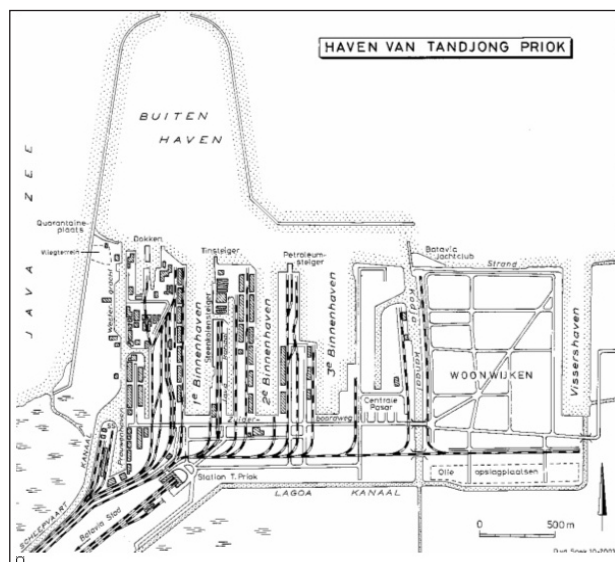
Jakarta stands on an alluvial plain of volcanic debris on the north coast of West Java (Verstappen 1953). The earliest settlement, Kalapa, was founded on the Ciliwung River, one of several that cut through the Sunda Region. Low altitude and heavy rainfall cause frequent inundations, called *banjir*, that silt the Ciliwung and form sandbanks across its mouth. These deposits expanded the seashore while monsoon currents formed the Bay of Jakarta and the Pulau Seribu islands.

Kalapa functioned as a harbour of West Javanese kingdoms. As Batavia, the headquarters of the Dutch colonial trade, it became Asia's most important externally induced trade centre. Regional and intercontinental trade spawned a symbiotic port and city, intertwining the functions of government with trade. In 1634, two 800-metre coral stone breakwaters were built, forming the harbour canal (Veering 2004: 133), but sea-going ships could not bypass the sandbanks blocking the river's mouth. Instead, ships anchored at the canal entrance, where goods were transferred into small *prahus* and transported at high tide to warehouses. West monsoon season made this laborious process precarious, as cargo was easily lost (Knaap 1996:

20). By 1874 coastal accretion had extended the breakwaters four kilometres into the Java Sea (Veering 2004: 133). This new land between city and sea was used for fish ponds, which bred mosquitoes that spread malaria, turning Batavia into one of the unhealthiest cities of its time and causing its decline. At the beginning of the nineteenth century, Governor-General Daendels's transferred government functions inland, separating the harbour and its trading companies from the government zone and its public buildings, the first phase in the port's detachment from the city.

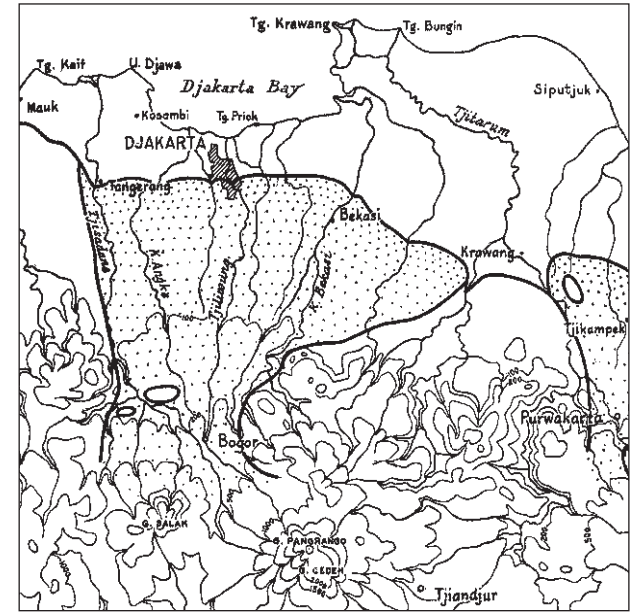
With the coming of steam power and the Suez Canal in the nineteenth century, Jakarta required facilities for larger ships. How to achieve this led to intense debate, elaborately documented by Veering (2004), that involved three proposals. The Chamber of Commerce and Industry supported enlarging the existing canal by adding a third parallel breakwater that would create an extra dock for use on two sides while maintaining the relationship between the old city centre and the harbour; silting, however, would remain a problem. Railway authorities preferred building a long dam connecting the western part of the Bay with the island of Onrust, creating a wide port twenty kilometres from the city and requiring rail transport. Department of Public Works engineers instead wanted a new harbour in the eastern Bay at Tanjung Priok, nine kilometres from the old city and less prone to silting. Two breakwaters far out to sea would shelter a large outer harbour, with an inner harbour of several docks, warehouses and railways.

The Tanjung Priok option won out. In the 1880s the new harbour went into service. Considered a triumph of public management and technology, it overcame opposition and functioned well. Railway, canal and road connections guaranteed interaction between the old city and the harbour (Veering, 2001). Increased shipping and long waiting times prompted improvements and an extension. Damaged during World War II, the harbour subsequently suffered from silting, lack of maintenance and inadequate management.



The harbour of Batavia, Tanjung Priok, c. 1930

Veering 2004: 137



Bay of Jakarta and hinterland, 1:1,000,000. Stippled: alluvial plane

Verstappen 1953: 8

Containers first appeared in Tanjung Priok in the 1970s and a container terminal opened in the 1980s. Container transfers increased from 3,000 in 1973 to 150,000 in 1984. During the 1990s toll road system upgrades improved access and helped increase transfers from 500,000 to 1.5 million. The spectacular rise of the container, most often transported inland by truck or rail, has spurred plans for port extension and land reclamation with private sector participation in accordance with current decentralization policy.

Port development created two busy harbours: old and new. But haunted by 'traffic jams, malfunctioning drainage, poor sanitation facilities, illegal and rundown housing, [and] open plots of land' (KuiperCompagnons 2004), the old town of Sunda Kelapa deteriorated and suburbanization marginalized it from bustling Jakarta. Partly executed plans to salvage its historic character restored some old buildings, created recreation and tourism activities and a toll road, but a master plan incorporating high-quality housing, the so-called Jayakarta Waterfront, conceptualizes a complete revitalization.

Modern transport will increasingly integrate Tanjung Priok into a harbour system determined by container operators offering worldwide services (Insa-Paper 1997). Singapore will function as a regional loading centre and Tanjung Priok will operate regional services supplied by local ports. Sunda Kelapa, once the main port of call for Asian trade, will retain its function as the inter-island sailing fleet harbour focused particularly on timber transport.

Jakarta both confirms the relevance and demonstrates the inadequacy of existing theoretical models of port city development. Current theory cannot explain a dual harbour that includes a traditional port for a wooden sailing fleet. But the harbour's history, environment and culture can. Supplementing current theory, Jakarta illustrates how important the uniqueness of a harbour is to the port city. ◀

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Peter J.M. Nas teaches urban anthropology at Leiden University and has published extensively on Indonesian cities and urban symbolism. He is secretary-general of the International Union of Anthropological and Ethnological Sciences (IUAES) and chairman of the Association KITLV (Royal Institute of Southeast Asian and Caribbean Studies), Leiden.
nas@fsw.leidenuniv.nl
www.leidenuniv.nl/fsw/nas

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